



IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

APPLICANT: JOHN E. PREVOST et al

ATTY DOC #: 8482.012

SERIAL NO.: 10/710,125

FILING DATE: 21 June 2004

TITLE: "ETHANOL PRODUCTION PROCESS UTILIZING SECONDARY TREATMENT AGENTS TO PRODUCE VALUE ADDED BY-PRODUCTS"

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**RESPONSE TO THE 08 JANUARY 2007 OFFICE ACTION**

Enclosed is a check for \$60 for a one-month extension of time to file this Response to the 08 January 2007 Office Action. Should additional monies be due, authority is hereby given to charge any such additional monies due to Deposit Account 20-1228.

In response to the 08 January 2007 Office Action please amend the claims as indicated on the attached List of Claims.

Claims 1-3 were rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lima *et al.* More particularly, it was argued that Lima teaches an ethanol production process wherein a sucrose or starch-containing feedstock is hydrolyzed under fermentation conditions and wherein the secondary treatment agent cyclodextrin glycosyl transferase (CGTase) is added. Reference to page 792, paragraph 2 and Figure 4 of the cited reference was made in support of this argument. Applicant respectfully disagrees with the conclusion reached by the Office, and for the reasons set forth below, requests that this rejection be withdrawn.

Lima does not disclose an ethanol production process utilizing both a standard ethanol fermentation agent and a secondary agent chosen to have the following characteristics: (a) active under the ethanol temperature and pH fermentation conditions, (b) not denatured in the presence of ethanol, (c) does not interfere with the production of the ethanol by the fermentation agent, and (d) converts some the constituents making up the whole stillage to the pre-selected by-product.

Lima does disclose that cyclodextrin can be obtained from the fermentation of liquidified cassavo starch by the use of cyclodextrin glucosyl transferase. The liquidification of the cassavo starch by use of an  $\alpha$ -amylase enzyme is conducted in a separate step. This process will produce ethanol. Lima then discloses that some portion of the ethanol can be added in the fermentation step of the liquidified cassavo starch to increase the amount of cyclodextrin that is produced. In fact, Lima teaches that the simultaneous fermentation of the cassavo starch in the presence of both the  $\alpha$ -amylase enzyme and the CGTase enzyme would not be desirable. At page 798, Lima reported:

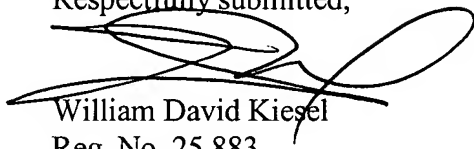
“Therefore, the elimination of glucose and maltose, which occurs with fermentation, is more important to increase the CD yield than the presence of ethanol.”

Thus, Lima teaches the separate fermentation of the cassavo starch by use of an  $\alpha$ -amylase enzyme to eliminate the glucose and maltose that is formed by the fermentation step.

Still further, there is no teaching, nor suggestion that the use of the CGTase enzyme would not interfere with the production of ethanol by the  $\alpha$ -amylase enzyme. Nor is there any teaching or suggestion that such a condition be considered in the production of the cyclodextrin. Thus, Lima does not make the invention defined in claims 1-3 obvious.

For the above stated reasons, it is requested that claims 1-3, as amended, be allowed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William David Kiesel', written over a horizontal line.

William David Kiesel

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